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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BAYAT, ALI

ART UNIT

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2624

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/811,955	Applicant(s) WALLACE ET AL.	
	Examiner ALI BAYAT	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 22-44 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 45-48 is/are allowed.
- 6) ☒ Claim(s) 9-15, 17-21 and 49 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☒ Claim(s) 1-8 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/30/04;1/31/06;10/16/07</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Reasons for Allowance for claims 45-48.</u> |

DETAILED ACTION

Response to Election/Restriction

1. Applicant's election with traverse of Group II in the reply filed on 4/28/08 is acknowledged. The traversal is on the ground(s) that there would be no serious burden to examiner for examining claims from Groups I, II and VIII. This is not found persuasive because the restriction is subcombination usable together, not a species and the subcombination are distinct because they have different features (splitter) in regard to Group I, because the Splitter "represents a de-multiplexing operation performed by the video coding system to route coefficients for each block to one of a pair of coding chains" see para.19 of specification. Further extracting coefficients for block corresponds to extracting a DCT coefficients which is used for different coding chains. See Para.49 of specification. However applicant argument in regard to Group VIII is persuasive. Therefor claims of Group II (9-21) and Group VIII (45-49) will be examined. The requirement is still deemed proper and is therefore made FINAL.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP

§ 608.01(o). Correction of the following is required:

Claims 17, 20 and 49 are objected to because of the following informalities: claims 17, 20 and 49 lines 1 recite "computer readable medium". However there is no support in specification. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The enablement requirement refers to the requirement of 35 U.S.C. 112 first paragraph that the specification describe how to make and how to use the invention. The invention that one skilled in the art must be enabled to make and use is that defined by the claim(s). In this instant claims 17-18 failing to comply with the enablement requirement, claim 17 directed to storing the coded video data by some process on a computer readable medium and there is no support in specification for "computer readable medium".

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Art Unit: 2624

Nonfunctional descriptive material that does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. Sec. 101. Certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, without any functional interrelationship is not a process, machine, manufacture or composition of matter. USPTO personnel should be prudent in applying the foregoing guidance. Nonfunctional descriptive material may be claimed in combination with other functional descriptive multi-media material on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. Sec. 101. The presence of the claimed nonfunctional descriptive material is not necessarily determinative of nonstatutory subject matter. For example, a computer that recognizes a particular grouping of musical notes read from memory and upon recognizing that particular sequence, causes another defined series of notes to be played, defines a functional interrelationship among that data and the computing processes performed when utilizing that data, and as such is statutory because it implements a statutory process.

Claims 17-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 17 recite a mere compilation of data, which does not impart functionality to a computer or computing device, and is thus considered nonfunctional descriptive material. Such nonfunctional descriptive material, in the absence of a functional interrelationship with a computer, does not constitute a statutory process, machine, manufacture or composition of matter and is thus non-statutory per se. Claim 18 is rejected under 35 U.S.C. 101 because it depends to claim 17.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-11, 13-14, 17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakoshi (US 5,825,935) in view of Hoshi (Pub. NO: US 2006/00623309).

Regarding claim 9, Murakoshi provides for organizing each frame of input video into a plurality of blocks of pixels(Fig.1 see input digital video signal to band divider 1 col.2 lines 54-60, further see Fig. 3 see 10 sub-band LL1_HH3, col.3 lines 48-50), also see Fig.11A-11E, col.6 lines 35-40, note wavelet transform has performed on one frame of input digital video signal and ten sub-bands (or blocks of coefficients) are produced) ,

for each block: coding the block as a plurality of coefficients according to a predetermined transform (Fig. 3 see 10 sub-band LL1_HH3, col.3 lines 55-60 see wavelet transform coefficient data) ,

quantizing the block of coefficients according to a quantization parameter(Fig.4 element 51 col.3 lines 60-65, note quantizing step corresponds to quantization parameter, also see col.4 lines 30-35),

extracting from each block a sub-set of coefficients (col.6 lines 60-65, note one pieced of data (8x8 pieces of data) is extracted from each of LL1, HL1, LH1, and HH1)

coding the extracted coefficients according to run length coding and variable length coding (Fig.4 element 3 col.8 lines 4-9, note variable length coding and run-length coding is performed on each overlap macro-block consisting of 8x8 or 64 pieces of transform coefficient data as explained in col.7 lines 24-28, note coefficients picked up from LL1, HL1, LH1, and HH1, which corresponds to first layer in wavelet transformation)

and storing the result therefrom in a first file,

coding the remaining coefficients according to run length coding and variable length coding (Fig.4 element 3 col.8 lines 14-20, note variable length coding and run-length coding is performed on HH3 which corresponds to third layer in wavelet transformation)

and storing the results therefrom in a second filed separate from the first file.

Murakoshi does not provide for storing the coded extracted coefficients in the first file and nor storing the remaining coded extracted coefficients in the second filed separate from the first file.

Hoshi provides for coding data of the low frequency and high frequency component of the DCT transformation coefficient of each DCT block has been stored at a predetermined memory location in regions 72 and 73 of the memory 204 respectively(examiner interprets that regions 72 and 73 in memory 204 corresponds to the first coded coefficients stored in a first file and remaining coded coefficients stored in a second file respectively, Fig.7 see low frequency 72 and high frequency 73 in Para.63). The prior art of Murakoshi and Hoshi are combinable because they are from the same field of endeavor (image transformation). It would have been obvious to a person of ordinary skill in the art at time the invention was made to incorporate the teaching of Hoshi with the system and method of Murakoshi to reproduced the data after the position at which the transmission error occurred .see para.20 by the way of variable length

coding image data after it was orthogonal transformed on a block unit basis comprising a predetermined number of pixels and decoding thereof. See para.2

Regarding claim 10, Murakoshi provides for a video coding method, wherein the transform is a discrete cosine transform (col.7 lines 20-25, see DCT).

Regarding claim 11 Murakoshi provides for a video coding method, wherein the transform is wavelet decomposition (Fig.3 col.3 lines 55-60, see wavelet transform).

Regarding claim 13 Murakoshi provides for a video coding method, wherein each frame in a video sequence is coded as an intra coded frame (col.4 lines 56-57, see intra-field coding).

Regarding claim 14 Murakoshi provides for a video coding method, wherein the input video data is obtained from a video capture device (Fig.1 see video signals, col.2 lines 55-56).

Regarding claim 17 as best understood, claim 17 is analogous to the method of claim 9. Therefore it similarly analyzed and rejected as claim 9. Examiner further disclose a computer readable medium (Fig.4 col.4 lines 10-15, see processor 55, which gets the output order from the output setting section 56, the setting section 56 includes a memory which stores a predetermined data output order).

Regarding claim 19 as best understood, claim 19 is analogous to the method of claim 9. Therefore it similarly analyzed and rejected as claim 9. note (

Fig.1 see input digital video signal to band divider 1 col.2 lines 54-60, corresponds to multiple frame, also Hoshi's invention relates to digital Video Tape Recording (VTR) therefore Hoshi also provides for multiple frames (col.1 para.4 of Hoshi).

Regarding claim 20 as best understood, claim 20 is analogous to the method of claim 9. Therefore it similarly analyzed and rejected as claim 9. Examiner further disclose a computer readable medium (Fig.4 col.4 lines 10-15, see processor 55, which gets the output order from the output setting section 56, the setting section 56 includes a memory which stores a predetermined data output order).

Regarding claim 21 as best understood, claim 21 is analogous to the method of claim 9. Therefore it similarly analyzed and rejected as claim 9. note (Fig.1 see input digital video signal to band divider 1 col.2 lines 54-60, corresponds to multiple frame, also Hoshi's invention relates to digital Video Tape Recording (VTR) therefore Hoshi also provides for multiple frames (col.1 para.4 of Hoshi).

Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakoshi (US 5,825,935) in view of Hoshi (Pub. NO: US 2006/00623309) and further in view of Boon et al. (US 7,394,941)

Regarding claim 12, Murakoshi as modified by Hoshi provides for Wavelet transform coefficient data in a video coding (Fig. 3 see 10 sub-bands LL1_HH3, col.3 lines 55-60). Murakoshi as modified by Hoshi does not provide for at least one block, predicting image data of the block from a neighboring block. However in the same field of endeavor Bonne provides for predicting image data of the block from a neighboring block (col.29 lines 30-35). It would have been obvious to a person of ordinary skill in the art at time the invention was made to incorporate the teaching of Boone with the system and method of Murakoshi as modified by Hoshi to provide an image predictive coding/decoding apparatus and method capable of simply generating prediction image data of the spatial region at high speed with high accuracy. See col.4 lines 50-55 of Boone.

Regarding claim 15, Murakoshi as modified by Hoshi provides for Wavelet transform coefficient data in a video coding (Fig. 3 see 10 sub-bands LL1_HH3, col.3 lines 55-60). Murakoshi as modified by Hoshi does not provide for video coding method, wherein the input video data is obtained from decoding of predicatively coded data. However in the same field of endeavor Bonne provides for obtaining the input video data by decoding of predicatively coded data (col.29 lines 45-53). It would have been obvious to a person of ordinary skill in the art at time the invention was made to incorporate the teaching of Boone with the system and method of Murakoshi as modified by Hoshi to provide an image predictive coding/decoding apparatus and method capable of simply generating

prediction image data of the spatial region at high speed with high accuracy. See col.4 lines 50-55 of Boone.

Allowable Subject Matter

6. Claims 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Allowed Claims

7. Claims 45-48 are allowed.

Reasons for Allowance

8. The following is an examiner's statement of reasons for allowance: the closest prior art of Murakoshi and Hoshi failed to teach or suggest for coding the extracted coefficients of a pair of blocks according to run length coding using a scan direction that: progresses across a first block of the pair in a zig-zag from a lowest frequency coefficient to a highest frequency coefficient therein,
advances to a highest frequency coefficient of a second block of the pair,
and progresses across the second block from the highest frequency coefficient to the lowest frequency coefficient in a zigzag. As cited in claim 45.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Art Unit: 2624

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALI BAYAT whose telephone number is (571)272-7444. The examiner can normally be reached on M-F 9:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ali Bayat/
Patent Examiner
Division 2624
7/16/08

Application/Control Number: 10/811,955
Art Unit: 2624

Page 12